

JOHN STUART MILL, FREDERICK TAYLOR AND HOMO ECONOMICUS: MANAGEMENT, RATIONALIZATION AND HUMAN CAPITAL

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ABSTRACT

Since the dawn of the Industrial Revolution, management has struggled to obtain maximum profit at minimum expense; a process which has involved learning how to harness, exploit, train, motivate, rationalize and direct what has – up to the mechanized and computerized age - been one of the workhorses of most business: human labor. Almost two hundred years ago, John Stuart Mill put forth arguments arguing for the exploitation of all means towards maximum wealth creation. Within a century, Taylor's notion of scientific management would take thought processes out of the hands of laborers and reduce them to the level of mindless droids; silently fulfilling repetitious tasks management would perfectly design and allot them. Sloan would soon create the model for American corporate management. From these arguably inhuman beginnings, organization and management science has grown to recognize the complexity and diversity of managerial decision making concerning the use of human capital. Models of this diversity in studies of how cognition influences decision making about labor use demonstrate the timelessness of optimizing under the constraints of today's economic turmoil.

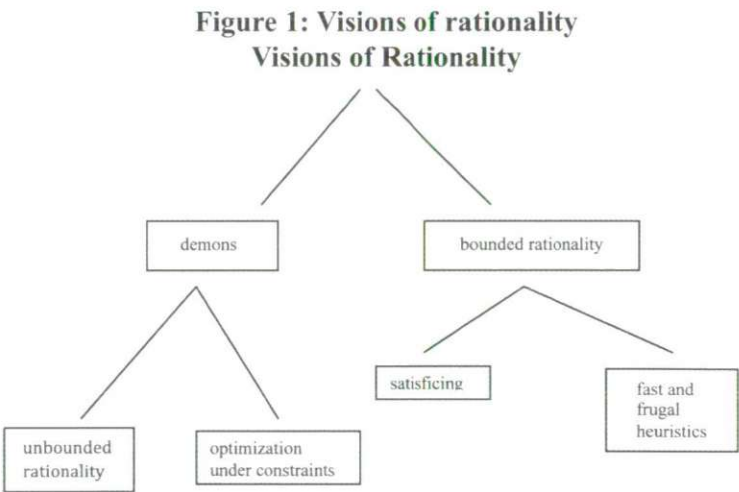
1. Introduction

Management requires innovation in thinking about decisions which is likely to create sustainable competitive advantages for an organization, in order to survive the challenges of the 21st century. The economic woes since the fall of 2008 have only increased the pressures on management to exact profits at minimum expense. How to do just that was systematically introduced by Taylor over a century ago, radically restricting those involved in decision-making and precisely defining task-oriented assignments to each and every employee. Taylor's notion of scientific management would take thought processes out of the hands of laborers and reduce them to the level of mindless droids; silently fulfilling repetitious tasks manage-

ment would perfectly design and allot them. In the 20th century, Sloan would soon create the model for American corporate management, placing the company at the center of the employee’s identity, the focus of his loyalty and organize him into teams of specialized groups from which one’s identity as a professional sprang. From these arguably inhuman beginnings, organization and management science has grown to recognize the complexity and diversity of managerial decision making concerning the use of human capital. Regardless of how an organization is managed, the decision-making processes confront managers with the same challenges: how to cut costs, where and with what level of impact. Effectively doing so requires the elements of sound judgment and a study of how human beings act when faced with a decision.

2. Judgment and Human Decision

Academic studies of judgment and human decision (JDM) include a wide range of management disciplines, as deliberation of the accurate modeling of how to make ‘good’ choices in business, to improve the quality of decisions and to avoid making decision errors grow in importance due to today’s volatile business environment (See Goldstein, 2010). Judgment and decision making are informed by the need to select from among a set of choices and to evaluate opportunities. In other words, managers examine the options they perceive as being available to them for taking advantage of an opportunity and weigh potential choices against the influence of risk and the utility of the opportunity in question. This ability of cognitive examination, or cognition, may be defined as the art of focusing on what is relevant and deliberately ignoring what is not (Gigerenzer & Todd, 1999). Modeling cognition, Gigerenzer and Todd provide the following figure:



Source: Gigerenzer Gerd & Todd Peter (1999 section 5.2.)

Within the theoretical understanding of rationality is the element of the ‘demon,’ more formally known as Laplace’s demon. Laplace was first to scientifically publish an articulation of causal or scientific determinism, in 1814. Determinism argues that if someone knows the precise location and momentum of every atom in the universe, then their past and future values for any given time are entailed, i.e. these values can be calculated from the laws of classical mechanics (Minkel, 2002). The demonic element is the argument that the human intellect might, through access to a presumed parallel universe, be capable of accessing an infinite amount of information. This scientific speculation, which touches on the realm of physics, might seem at first glance far from the world of management science, but this notion has entered it through the backdoor of information analysis and computer science, and is known as unbounded rationality.

The notion of unbounded rationality is related to the concept of man as being *Homo economicus* (or economic man), a term originally used in the late nineteenth century by critics of the writings of John Stuart Mill. Writing on political economy, Mill wrote that it

“[...] does not treat the whole of man’s nature as modified by the social state, nor of the whole conduct of man in society. It is concerned with him solely as a being who desires to possess wealth, and who is capable of judging the comparative efficacy of means for obtaining that end.” (Mill 1836 p. 97.)

The critical concept of human beings as economic man was posited as a representation of Mill’s view that the individual only actually commits oneself to acquiring the highest possible well-being for one’s self. This one does by exploiting any and all available information about the existing opportunities and/or constraints, whether natural and institutional, on one’s ability to achieve one’s predetermined goals. This focus on self-serving behavior in society, also known as rational behavior, has been elaborated by Neumann and Morgenstern (1944) through the expected utility theory (EUT). Several decades later, Fishburn (1981) summarized the principles of rational (economic) behavior by using five axioms to illustrate the belief system utilized by individuals he terms social actors, when applying the standards for making a decision used by economic man:

- 1). If confronted with several options, social actors are able to use a form of preference ordering (order of preferences).
 - 2). If social actors prefer one option over another, this option is chosen (choice of preferences).
 - 3). Preferences of social actors are consistent; no contradictions occur (transitivity of preferences).
 - 4). Preferences of social actors are independent from other options or considerations (independence of preferences).
 - 5). Preferences of social actors are not subject to changes, no matter how they are presented, as long as they are logically equivalent (invariance of preferences).
- (Adapted from Fishburn 1981).

In order to meet the demands of unbounded rationality, all five axioms have to be fulfilled, as an action can only be considered to be rational within this belief system if the five axioms have been tested and confirmed. Being self-centered in nature, I define the concept of unbounded rationality as one which positions the needs of the individual 1) extratemporally, i.e. outside any time constraints; 2) supracognitively, i.e. existing outside the constraints of knowledge (e.g., information); and 3) supra-computationally, i.e. existing outside the constraints of computational ability. More specifically, unbounded rationality subordinates the temporal, the cognitive and the computational to a perceived optimized subjective utility. Suspended are primarily the larger considerations of what is ethically, socially or humanly acceptable, in deference to what is most economical, or requiring minimal cost.

Direr for many economists, such as Keynes, is the suspension of any requirement in decision making to consider the element of uncertainty (See Pecchi & Piga 2010). According to Keynesian arguments, the economic man envisioned by Mills, should he become the norm, would be disastrous. Keynes himself stated: "Capitalism is the astounding belief that the most wickedest of men will do the most wickedest of things for the greatest good of everyone" (From Beinhocker 2006 p. 408.). In short, economically sound decision making encompasses a wide range of aggressive forms of human behavior, targeted towards maximum self-realization through maximum profit taking, regardless of the moral, ethical or actual cost to all others. Traditionally, the economic world is therefore populated by shrewd, dispassionate greed-ridden entities derisively called *Homo economicus* by those who would suspend human insatiability for increasing one's wealth, in favor of a more morally guided behavioral model.

However, as evident from the unrealistic determinism of the five axiom standard presented above, this standard economic representation of human behavior is governed by three rather unrealistic traits: unbounded rationality, unbounded resolve and unbounded selfishness. In this understanding, economic man working through unbounded rationality would exist as one who would always have all the time necessary to gather and interpret all the information that could possibly affect any and all problems, to make every choice about every economic decision. Unbounded resolve would necessarily be the second of these traits, as without limitless steadfastness, no such economic agent existing in the realm of unbounded rationality could possibly possess the stamina to cognitively explore every existing element in the universe acting on or influencing one's decision making at every second or every day, without fail. Unbounded selfishness in itself unmasks the moral evil one supposes resides in all of us, but even Western notions of the satanic portray the Fallen Angel as being bounded by certain limits. Seen against this background, surely economic man, being fallible and limited by constraints imposed upon him by others and by society as a whole, would also be forced into some kind of boundary limiting his freedom in decision making. In the worst of all possible fictitious worlds, such an individual might truly exist, but human evil can only be realisti-

cally portrayed against the background of the real world and not in the realm of fantasy. In other words, no realistic model of economic reasoning can be an example of unbounded rationality.

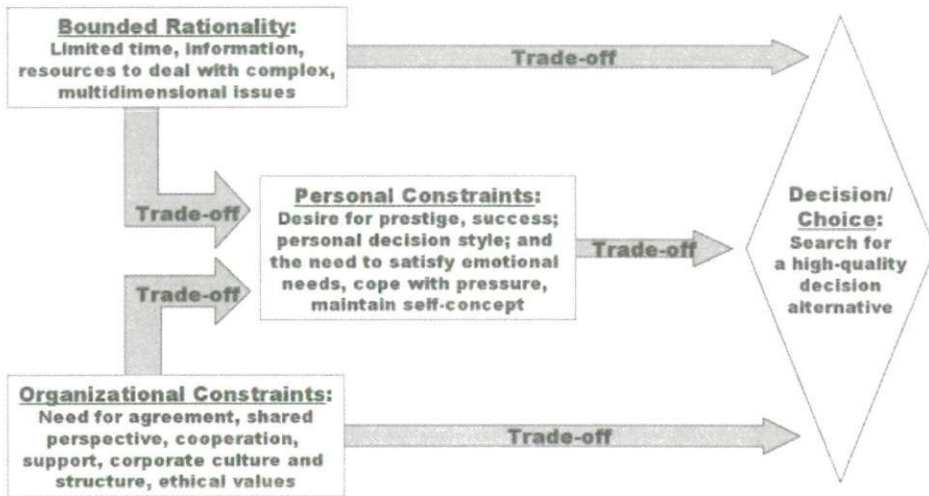
Yet, Laplace's demon manifests itself in another aspect of (ir)rationality. Optimization under constraints is the notion limiting, but not replacing, unbounded rationality that recognizes the effectiveness of human decision making in limiting itself to what is necessary, despite the perceived limitlessness of choice. Gigerenzer and Todd (1999) define optimization under constraints as that aspect of rationality that is capable of gauging the benefits and costs of searching for additional information and capable of stopping that search as soon as the costs overshadow the benefits of searching further. Unlike unbounded rationality, where the search for solutions itself defines, determines and informs human economic cognition, optimization under constraints does not argue that the ends are the means; rather, the decision itself, i.e. the management solution is always reached without having all possible information. There remains, however, one fatal flaw to this notion of rationality, as it still demands that the decision maker repeats by necessity the calculation of all the benefits and costs of searching for additional information at each stage of decision making. In other words, the assumption is that management has unlimited time and knowledge to manage what must unavoidably be a computational explosion. As Gigerenzer and Todd note, "the paradoxical approach is to model "limited" search by assuming that the mind has essentially unlimited time and knowledge with which to evaluate the costs and benefits of future information search" (1999 section 2.2). Optimization under constraints fails, therefore, to limit unbounded rationality, as it might actually lead to requiring even more knowledge and calculations than unbounded rationality, before exhausting all available and profitable cost-benefit possibilities existing on which a manager could settle. Crucial here is the understanding of what determines relevance in decision making, as well as how one would calculate and verify the minimum degree of effort expended by a decision maker, before that actor would fulfill all the possible minimum requirements of optimized reasoning. Here, one must also consider the complex interaction of the elements of effort and effect, as every effort has a result, which must necessarily require renewed calculation of its benefit. This relationship demonstrates how optimization under constraints has failed its own litmus test, as researchers have failed to acceptably include this relationship in decision making modeling (Sperber & Wilson 1995). As there is currently no possibility to model degrees of future effort and effect in their relation to each other, there is no logical method for modeling optimization in decision making under constraints.

This dual failure of unbounded rationality and optimization under constraints in defining economic human reasoning brings our discussion to what has been termed the Silent Revolution of Nobel Laureate (1955) Herbert Simon (Callebaut 2007 p1.). Introducing the notion of bounded rationality, Simon argued that there is an individual collective rational choice that considers "the limits of human capa-

bility to calculate, the severe deficiencies of human knowledge about the consequences of choice, and the limits of human ability to adjudicate among multiple goals” (Simon 1997 p270). This consideration inevitably incorporates a theory of search, which Simon found in his concept of satisficing, first introduced in 1955 (Simon 1979). Simon’s idea was, simply put, that since humans are only rational within limits, we do not consider all possible options and then carefully decide which of the entire universe of available options will maximize our profits and equally minimize our losses. Instead, decision makers consider their options one at a time, then selecting the first satisfactory - or just good enough - option that meets our minimum level of acceptability. This selection was the introduction of Simon’s stop rule, which is governed by one’s past experience. One ‘stops’ mentally perusing options based on one’s aspiration level, which varies according to the degree of success or failure one has experienced in the past (ibid.) Human psychology enters considerations of rationality on its most basic level: one desires to re-experience the acclaim garnered with success and to avoid the shame of failure. This fundamental desire for success is satisfied at the minimum threshold and does not require additional exertion to be experienced. Therefore, once attained easily, humans normally cease to work harder to experience what they can have for less effort. However, Simon rejected any notion that he thought humans were essentially lazy. Humans were rational instead; merely boundedly so (Simon 1957).

The demonic and fantastical in human rationality are excised by the human need to make fast decisions at best; by the need to exert the least effort in meeting the lowest expectations of relevance at worst. (Shakun 2001) Gone, Simon’s critics argue, is the element of optimization, posing the question as to whether the economic man of classical economics would, in light of satisficing, not simply look for ‘easy’ problems, i.e. those that apparently would not challenge full rationality assumptions and thereby fail their organizations as decision makers. Later, critics suggested that decision making should not be viewed as occurring in a vacuum; rather, rational decision making must be viewed as subject to one’s organizational environment and as being influenced by the element of tacit knowledge (Nelson & Winter 1982). This environment places constraints on decision makers through e.g., systems of checks and balances (upper management vs. middle management, stockholders vs. management, agreed strategies vs. managerial flexibility), informal agreements among peers, the obligation to act within the rule of law and the need to maintain one’s prestige within the organization. These constraints force managers to make compromises, e.g. trade-offs, in order to achieve certain, immediate goals or to allow greater flexibility at some point in the future. Tacit knowledge inserts itself into the decision process as a limiting factor to managerial autonomy, as it denotes that shared body of reference others possess within an organization or even between opposing negotiating agents, which impinge on a decision maker’s ability to choose from tactics and opportunities at will. Below, a representation of bounded rationality, including considerations, such as those made by Nelson and Winter:

Figure 2. Bounded rationality and decision making.



Source: Nielsen, François (2001 n.p.)

Negotiations within an organization, e.g., with colleagues, as well as discussions with business associates from outside one's own organization, compel decision makers to use bounded-type strategies to achieve their goals. In pursuing one's own agenda under pressure, whether due to time constraints (e.g., investment or logistical deadlines), economic pressures (e.g., payment schedules, currency fluctuations, contractual obligations) or expectations to perform (e.g., from the media and/or the general public, from stockholders, from peers, from employees), Tversky and Kahnemann (1974) propose that decision makers in many cases may be incapable of reasoning optimally. Indeed, they argue, everybody uses mental 'short-cuts' known as heuristics to make decisions in such a manner that eases the cognitive load or the stress of decision making. Heuristics involve our ability to reach conclusions using stored memory cues, without having to use or analyze all of the other memory-available, relevant information at one's disposal. Heuristics therefore permeate all aspects of life, from the most commonplace activities to more important ones, such as economic decision making and political affairs. For example, people often decide to speed when driving not because they are in a hurry, but rather because humans react to other drivers' behaviors around them by mimicking what is, under those circumstances, 'normal' – even if such behavior breaks the law or may be considered dangerous. Accelerating beyond the posted speed limit is a subjective choice involving bounded rationality. We decide what is best, based on how we judge reality to be, while trying to 'fit in'. In other words, our choice is our own, but mirrors the choices others have already made. Decision makers cast aside a perceived need to completely weigh all the benefits against all the costs, and decide to do what 'feels right' and provides quick and easy problem resolution.

However, in making this decision to speed, drivers can err with expensive consequences. Tversky and Kahnemann examined 'heuristics and biases' affecting judgment and decision making, arguing that the practice often leads to outcomes that are not ideal. As with the speeding driver, people often act spontaneously and on too little information, make incorrect assumptions, and do not understand the consequences of their decisions. Perhaps, for example, there is a bend in the road ahead; hiding the driver's view of the highway patrol car parked at the side, with a law enforcement officer holding a radar gun in his/her direction (ibid.).

There is another type of heuristics theory called fast and frugal heuristics, which asserts that while mistakes will inevitably occur, the benefits from the decisions will generally outweigh the costs. not only because using heuristics enables us to reach judgments given realistic constraints of time and attention, but because heuristics users often outperform those using more conventionally rational methods. Fast and frugal heuristics, researchers argue, are simple to implement, as they limit a decision maker's information search and, due to the need to decide under pressure and/or constraint, also limit the process of evaluating cost against benefit. Fast and frugal heuristics, as seen in the above-given example, describe not only the outcome of the decision-making process, but also examine the decision making process itself. Fast and frugal heuristics are composed of three simple elements "that specify how information is searched for (search rule), when information search will be stopped (stopping rule), and how the processed information is integrated into a decision (decision rule)" (Reimer & Rieskamp n.d.).

When, how and why a decision maker decides to stop searching for information and to decide is, however, controversial in research and raises the question as to whether humans actually use heuristics or simply a 'gut feeling' in rationality (Astebro & Elhedhli 2006). In reviewing the elements comprising Gigerenzer and Todd's visions of rationality, one recognizes the complexity of human psychological, economic theoretical and ethical entanglements each of them present. Regardless, each of these elements is still relevant for the twenty-first century and will continue to challenge economic and management theory researchers in the decades ahead.

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